

Phase 3 - - Plan Formulation				
Activity No. 301 - - Potential Plan Elements				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
301.1 Water Conservation	301.1 Irrigated agriculture	301.1.1 Implement water conservation activities and projects under Title XII to the extent allowed within the current authorization of Federal and State funds.	<p>1. Determine amount of funds available from existing Federal and State authorizations (indexed as appropriate) for construction of irrigation conservation projects under Title XII.</p> <p>2. Utilizing Basin Conservation Program rating criteria or other appropriate means, develop a list of priority projects identifying the entity, plan elements, estimated construction cost, and annual water savings which could be implemented within the Task 1 authorization ceiling.</p>	<p>YRBWEP staff.</p> <p>Title XII and Reclamation accounts.</p> <p>YRBWEP staff.</p> <p>WMP, 2003</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
		<p>301.1.2 Same as objective 301.1.1 except expand the scope of analysis to consider a new authorization ceiling and/or other funding sources.</p> <p>301.1.3 Estimate the annual irrigation diversion reductions if water conservation projects were implemented under either Objectives 301.1.1 or 301.1.2.</p>	<p>1. Develop list of “second priority” projects identifying the entity, plan elements, estimated construction cost, and annual water savings which could be implemented within the expanded authorization ceiling.</p> <p>1. For planning purposes, define policies and procedures for applying diversion reductions during proration and non-proration years. Adjust conclusions of 202.1 and 204.1.</p>	<p>YRBWEP staff.</p> <p>YRBWEP staff. WMP, 2003</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
301.2 Water Banking		301.2.1 Determine viability of water banking as a plan element for meeting water supply needs.	<p>1. Consult with WDOE regarding ongoing activities related to structuring a Yakima River Water Bank pursuant to ESHB 1640 (2003 regular session).</p> <p>2. Working in conjunction with WDOE, determine viability of water banking as a plan element, its structure, estimated administrative costs, and estimated annual water transactions.</p>	ESHB 1640 and water banking reports.

Item	Sub-Item	Objectives	Tasks	Primary Data Base
301.3 Water Acquisition		301.3.1 Determine viability of permanent acquisition of water rights as a plan element for meeting water supply needs.	<p>1. Consult with YRBWEP staff regarding ongoing activities related to opportunities of acquiring water rights on a permanent basis.</p> <p>2. Working in conjunction with YRBWEP staff and others, determine viability of permanent acquisition of water rights as a plan element, its structure, estimated administrative costs, and estimated permanent acquisition.</p>	<p>Basin Conservation Program Plan, April 1998.</p> <p>YRBWEP staff.</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
301.4 Storage	301.4.1 Yakima River	The following work would proceed only if Activity 205.1.1 indicates there is water available and if so, resizing of the following facilities may be necessary [See 205.1.1, Task 3]		
	301.4.1.A Cle Elum Lake	301.4.1.A Estimate current cost of increasing storage capacity by 15,000 acre-feet for instream flow purposes	<p>1. Determine extent of current and potential additional shoreline erosion and relocation needs with increased storage.</p> <p>2. Formulate policy for resolving current and potential shoreline erosion.</p> <p>3. Prepare preliminary designs and cost estimates of dam modifications and shoreline erosion control and OM&R costs.</p>	<p>Reclamation report _____, dated _____.</p> <p>UCAO staff.</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
	301.4.1B Bumping Lake Enlargement	301.4.1B Estimate current cost of increasing storage capacity to a total of 250,000, 400,000, and 450,000 acre-feet	1. Prepare current construction and OM&R cost estimate.	Prior work by TSC. Technical report by Montgomery Water Group, Inc., “Storage Strategies, January 2002”.
	301.4.1.C Wymer Dam and Reservoir	301.4.1.C Estimate current cost of developing 142,000 acre-feet of storage capacity	1. Prepare current construction and OM&R cost estimate.	Prior work by TSC. Technical report by Montgomery Water Group, Inc., “Storage Strategies, January 2002” and “Wymer Dam and Reservoir Project Review, November 2002”.
	301.4.1.D Keechelus to Kachess Pipeline	301.4.1.D Estimate current cost of constructing a pipeline to convey Keechelus inflow in excess of storage capacity to Kachess for storage.	1. Prepare current construction and OM&R cost estimate.	Prior YRBWEP work.

Item	Sub-Item	Objectives	Tasks	Primary Data Base
	301.4.2 Columbia River	Note: The analysis in 301.4 and 301.5 assumes that a water right can be obtained for diversion of Columbia River waters. Further, in the WIS Final Report several alternate locations of pumping plants and reservoir inlet and outlet structures, and alignments of inlet and outlet conduits were developed.		
		301.4.2.A Estimate current cost of Black Rock Dam, Reservoir, Pumping Plant, Inlet and Outlet Conduits and Structures, Transmission Lands, and Rights-of-Way alternate WIS project proposals. [Note: If 205.1.2.1, Task 3 results in development of new alternates then these should be used in lieu of the above.]	1. Prepare current construction and OM&R and power costs as appropriate.	“Black Rock Reservoir Study Final Report, May 2002”, WIS
		301.4.2.B Identify most viable alternate storage project proposal.	1. Evaluate and compare alternate storage project proposals. and identify most viable to carry into formulation of alternative plans, Activity 302.	

Item	Sub-Item	Objectives	Tasks	Primary Data Base
301.5 No Black Rock Storage	301.5.1 Columbia River	Note: See note in 301.4.2		
		305.5.1.1 Estimate current cost of delivering water from the Columbia River directly to Yakima Project entities susceptible to receiving Columbia River water and willing to exchange.	<p>1. Review recent reconnaissance level study work for use in plan formulation. Identify and address deficiencies if any.</p> <p>2. Prepare current construction and OM&R cost estimates as appropriate.</p>	Washington Infrastructure, Inc, “Black Rock Reservoir Study Final Report, May 2002.”
301.6		Identify most viable Columbia River alternate project proposals	1. Evaluate and compare Columbia River alternate project proposals and identify most viable to carry into formulation of alternative plans, Activity 302.	

Phase 3 - - Plan Formulation				
Activity 302 - - Alternative Plans				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
302.1 Future Without Project	302.1.1 Yakima River and Columbia River	302.1.1 Structure “Future Without Project” alternative plan	1. Identify those Federal, State, and local water supply activities that will be implemented and are to be included in the “Future Without Project” alternative. These could include, among others, Cle Elum Lake Enlargement, Wapatox Power Plant acquisition, change in points of diversion of Kennewick and Columbia irrigation districts, water banking, water acquisition, and Title XII Conservation Program.	Wapatox Power Plant acquisition agreement(s). Draft Feasibility Study Reports of Kennewick and Columbia irrigation districts change in points of diversion. YRBWEP staff

Item	Sub-Item	Objectives	Tasks	Primary Data Base
			<p>2. For the project elements selected in Task 1 above, determine the water supply relationships to the extent necessary for operations modeling.</p> <p>3. Conduct operation study of “Future Without Project” to illustrate extent water needs met and to provide a baseline to evaluate effects of “With Project” alternative plans.¹</p>	River Ware Operation Model and possibly Range of Variability Approach (RVA).

¹ See POS narrative for discussion of “Future Without Project ” operations.

Item	Sub-Item	Objectives	Tasks	Primary Data Base
302.2 “Future With Project” NED “Core”	302.2.1 Yakima River	302.2.1 Determine if a NED “core” should be included in all Yakima River alternative plans. If so, define “core”.	<p>1. Select potential element(s).</p> <p>2. Conduct operation studies to illustrate extent water supply needs met by aggregate element(s).</p> <p>3. Determine net benefits (annual equivalent benefits greater than annual equivalent costs) of core element(s).</p> <p>4. Define a NED “core”, if any.</p>	

Item	Sub-Item	Objectives	Tasks	Primary Data Base
302.3 “Future With Project” Alternative Plans	302.3.1 Yakima River	302.3.1 Determine potential NED alternative plan(s).	<p>1. Establish operating criteria which define the water supply goals for irrigation, instream flows, and municipal purposes.</p> <p>2. Conduct operation studies to illustrate extent water needs are met by each alternative plan.</p> <p>3. Determine net benefits (annual equivalent benefits greater than annual equivalent costs) of each alternative plan.</p> <p>4. Determine potential NED alternative plan(s).</p>	

Item	Sub-Item	Objectives	Tasks	Primary Data Base
	302.3.2 Columbia River	302.3.2 Determine potential NED alternative plan(s)	1. Reiterate 302.3.1 Tasks.	
302.4 “Future With Project” Other Alternative Plans	302.4.1 Yakima River and/or Columbia River	302.4.1 Determine if there are other alternative plans, while of lesser NED net benefits, are of significant importance in addressing Federal, State, and local interests.	1. Reiterate 302.3.1 Tasks but not constrained by net benefits.	

Phase 3 - - Plan Formulation				
Activity No. 303 - - Data Collection				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
303. Data Collection	303.1 Seismotectonic Information	303.1.1 Conduct additional seismotectonic activities.	<p>1. Conduct geologic and geophysical seismotectonic characterization studies involving geomorphic and Quaternary field work for assessing fault activity and regional seismicity analysis.</p> <p>2. Determine characterization of regional structure for input to ground motion models.</p>	

Item	Sub-Item	Objectives	Tasks	Primary Data Base
	303.2 Resource Information	303.2.1 Identify and collect data to assess possible effects of alternative plans on the aquatic, riparian/ wetland, terrestrial, and human resources of the Yakima River basin and the Columbia River.	<p>1. Select and refine impact indicators for aquatic, riparian/wetland, and terrestrial resource effects for evaluation.</p> <p>2. Identify other resource areas such as: ESA Listings Cultural resources Ecological resources Aesthetic attributes Indian Trust assess Water quality Hydropower supplies Other</p> <p>3. Identify and collect data related to Tasks 1 and 2.</p>	

Phase 3 - - Plan Formulation				
Activity No. 304 - - Evaluation, Comparison and Selection of Alternative(s)				
Item	Sub-Item	Objective	Tasks	Primary Data Base
304.1 Evaluation of Alternatives		304.1 Show effectiveness of each alternative in addressing needs, monetary and non-monetary impacts.	<p>1. Display resource conditions for “Future Without Project ” alternative.</p> <p>2. For each “Future With Project” alternative display measures including NED effects, effectiveness of meeting needs, and effects on the aquatic, riparian/wetland, terrestrial, and human resources of the Yakima River basin and the Columbia River.</p>	

Item	Sub-Item	Objective	Tasks	Primary Data Base
304.2 Comparison of Alternatives		304.2 Facilitate selection of viable alternatives for feasibility analysis.	1. Prepare narrative comparison among alternatives describing the extent of net economic benefits realized, effectiveness in addressing needs, and tradeoffs in the aquatic, riparian/wetland, terrestrial, and human resources.	
304.3 Selection of Viable Alternative(s)		304.3 Determine viable alternative(s) for feasibility analysis.	1. Fully document basis for selection of viable alternative(s).	
304.4 Preliminary Cost Allocation		304.4 Preliminary indication of costs by project purpose. for viable alternative(s).	1. Prepare appraisal-level cost estimates and benefits for preliminary Separable Cost-Remaining Benefits cost allocation. 2. Allocate project costs among reimbursable and nonreimbursable project purposes.	

Item	Sub-Item	Objective	Tasks	Primary Data Base
304.5 Preliminary Repayment Analysis		304.5 Preliminary indication of repayment requirements for viable alternatives.	1. Prepare preliminary repayment analysis of reimbursable project costs.	

Phase 3 - - Plan Formulation				
Activity No. 305 - - Plan Formulation Report				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
305 Plan Formulation Report		305 Provide Plan Formulation Report	1. Prepare report of plan formulation activities and findings. This will include alternative plans, benefits costs, their effectiveness in meeting water needs, and their environmental, ecological, and other effects. The viable alternative plan(s) will be identified and a preliminary cost allocation and illustration of possible repayment requirements presented.	

Phase 2 - - Pre-Plan Formulation				
Activity No. 306 - - Public Involvement				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
306.1 Public Involvement (PI) Program		306.1.1 Conduct PI Program activities related to Phase 3	1. Identify appropriate activities for implementation from the PI Plan developed in 103.11. 2. Conduct appropriate activities.	